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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/751,477 | 01/06/2004 | Dong Jae You | 041993-5363 | 3545 |

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| EXAMINER | |
|---|---|
| CHEN, WEN YING PATTY | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2871 | |

DATE MAILED: 04/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/751,477 | YOU, DONG JAE | |
| | Examiner | Art Unit | |
| | Wen-Ying P. Chen | 2871 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Objections*

Claims 3-5 and 10 are objected to because of the following informalities: Claims 3-4 and 10 which depend on claim 1, and claim 5 depends on claim 4 and further depends on claim 1. Claims 3-5 and 10 mention the light guide plate, which is not mentioned in claim 1, but instead, in claim 2. For the purpose of examination, the examiner will treat claims 3-4 and 10 as though depending on claim 2, wherein the light guide plate is mentioned, and claim 5 depending on claim 4 and further depending on claim 2. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

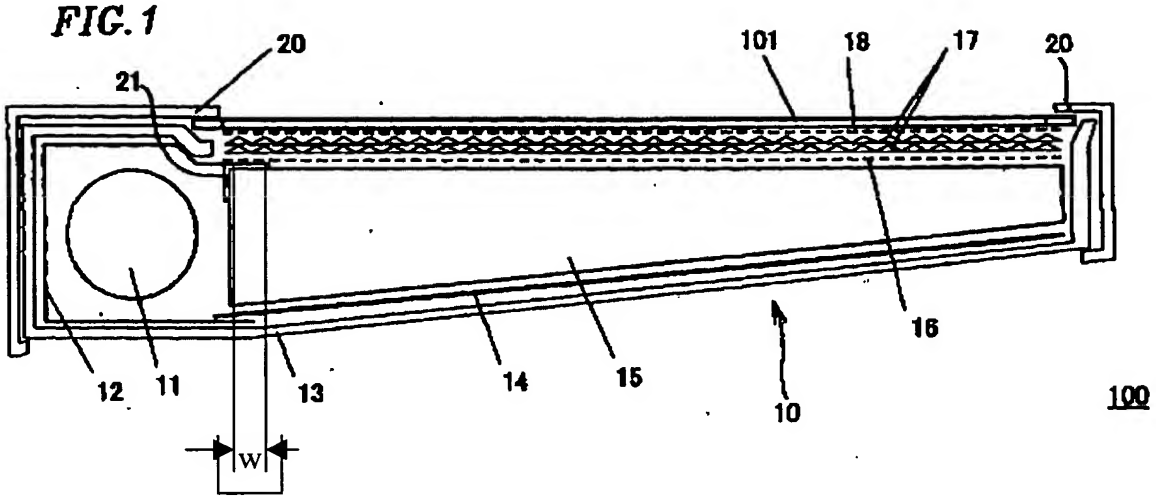
Claims 1-4 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Aoki (US 2004/0061813A1).

With respect to claims 1-4 and 9: Aoki discloses in Figure 1 a liquid crystal display device comprising: a liquid crystal display panel (element 101); a backlight unit (element 100) having a fluorescent lamp (element 11), a reflection sheet (element 12) reflecting light emitted from the fluorescent lamp, and a bottom cover (element 13) supporting the reflection sheet; and a

metal chassis (element 20) supporting and affixing the liquid crystal display panel and the backlight unit. Aoki also discloses the backlight unit comprising: a panel-type light guide plate (element 15) having a light projection plane (Figure 2 element 15b) and a light incident plane (Figure 2 element 15a); a reflection plate (element 14) along a rear side of the light guide plate; a lamp assembly at the light incident plane of the light guide plate, the lamp assembly including the fluorescent lamp and the reflection sheet at an outer side of fluorescent lamp; a plurality of optical sheets (element 17) over the light projection plane of the light guide plate; a rectangular mold frame (element 13) receiving the reflection plate, the light guide plate, the plurality of optical sheets, and the lamp assembly therein; and a bottom cover extending from a bottom of the mold frame to an outer side of the reflection sheet. Therefore, it is implied that the bottom cover is an extension of the mold frame and is of one single element (element 13).

On page 3 paragraph 0043, Aoki further discloses both the reflection sheet (element 12) and an end of the bottom cover (element 13) having a round shape and that the reflection sheet encloses an outer side of the fluorescent lamp except for a light exit portion of the fluorescent lamp. The reflection sheet (element 12) overlaps a portion of the light guide plate by a first overlap amount (w) as shown in the below figure:

FIG. 1




***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 5, 10-11, and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki (US 2004/0061813A1) in view of Shioya et al (JP 2001/338512A).

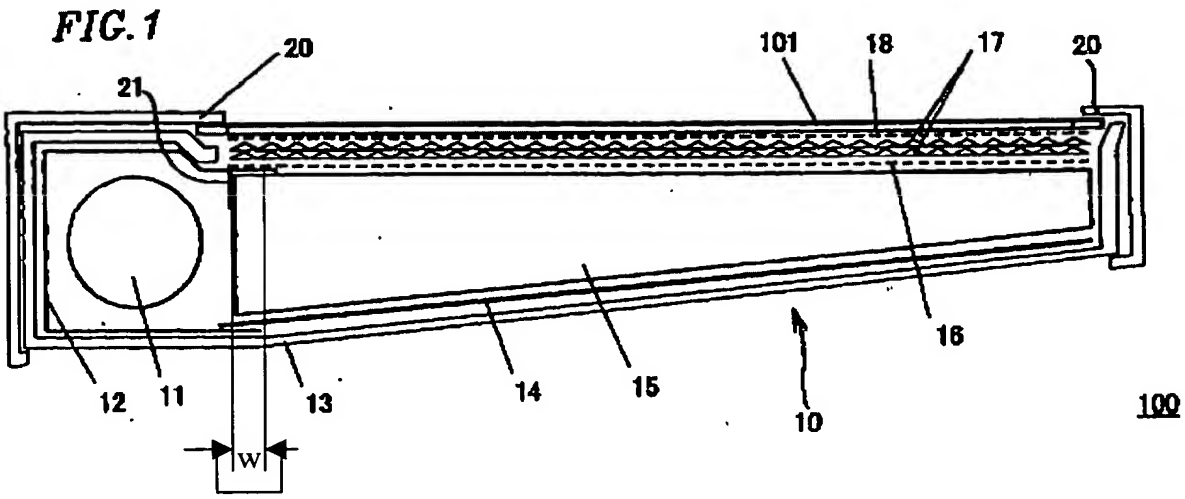
With respect to claim 5: Aoki discloses all of the limitations of the liquid crystal display device set forth in claims 1 and 4, but Aoki does not disclose that the first overlap amount is within a range of about 0.2mm to about 30mm. However, Shioya et al. in Figure 5 disclose a reflection sheet (element 8) overlapping the light guide plate (element 5) with an overlapping portion (element 21a) by an amount of 0.5mm (element w; column 11, line 4), which is in the specified range of between 0.2mm and 30mm. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to produce a liquid crystal display device according to Aoki's disclosure with the specified overlapping dimension taught by Shioya et al. since Shioya et al. teach that the overlapping amount determines the effective light-emitting dimension and the unused section of the light-emitting surface of the light guide plate (Column 2, lines 43-50).

As to claim 10: Aoki discloses all of the limitations of the liquid crystal display device set forth in claim 1, but Aoki does not disclose that the space between an end portion of the bottom cover and the light guide plate is within a range of about 0.1mm to about 50mm. However, Shioya et al. in Figure 5 disclose a bottom cover (element 3) with a space (element C) between the light guide plate (element 5) of an amount of 0.1mm (Column 11, line 3), which is in the specified range of between 0.1mm and 50mm. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to produce a liquid crystal display device according to Aoki's disclosure with the specified spacing dimension taught by Shioya et al. so that the light leakage amount can be controlled with the gap dimensions.

As to claims 11 and 15-16: Aoki discloses in Figure 1 a backlight unit comprising: a panel-type light guide plate (element 15) having a light projection plane (Figure 2 element 15b)

and a light incident plane (Figure 2 element 15a); a reflection plate (element 14) along a rear side of the light guide plate; a lamp assembly at the light incident plane of the light guide plate, the lamp assembly including the fluorescent lamp and the reflection sheet at an outer side of fluorescent lamp; a plurality of optical sheets (element 17) over the light projection plane of the light guide plate; a rectangular mold frame (element 13) receiving the reflection plate, the light guide plate, the plurality of optical sheets, and the lamp assembly therein; and a bottom cover extending from a bottom of the mold frame to an outer side of the reflection sheet. Therefore, it is implied that the bottom cover is an extension of the mold frame and is of one single element (element 13).

On page 3 paragraph 0043, Aoki further discloses both the reflection sheet (element 12) and an end of the bottom cover (element 13) having a round shape and that the reflection sheet encloses an outer side of the fluorescent lamp except for a light exit portion of the fluorescent lamp. The reflection sheet (element 12) overlaps a portion of the light guide plate by a first overlap amount (w) as shown in the below figure:



However, the dimension of w is not disclosed by Aoki, but disclosed by Shioya et al. in Figure 5. Shioya et al. disclose a reflection sheet (element 8) overlapping the light guide plate (element 5) with an overlapping portion (element 21a) by an amount of 0.5mm (element w; column 11, line 4), which is in the specified range of between 0.2mm and 30mm and a bottom cover (element 3) with a space (element C) between the light guide plate (element 5) of an amount of 0.1mm (Column 11, line 3), which is in the specified range of between 0.1mm and 50mm. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to produce a liquid crystal display device according to Aoki's disclosure with the specified overlapping dimension and the spacing dimension taught by Shioya et al. since Shioya et al. teach that the overlapping amount determines the effective light-emitting dimension and the unused section of the light-emitting surface of the light guide plate (Column 2, lines 43-50) and that the amount of spacing controls the light leakage amount between the bottom cover and the light guide plate.

Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki (US 2004/0061813A1) in view of Nakano (US 2003/0053008A1).

With respect to claims 6-7: Aoki discloses all of the limitations of the liquid crystal display device set forth in claim 1, but fails to disclose that the reflection sheet is formed of one of a synthetic resin. However, Nakano discloses in Figure 1 a reflection sheet (element 2) formed of one of a synthetic resin selected from the group consisting of alkylbenzene sulfonate (ABS), polyethylene terephthalate (PET), and polyvinyl chloride (PVC), and a non-metallic

substance (Page 3, paragraph 0034). Nakano also discloses in paragraph 0036 that the synthetic resin includes one of a polymer having a high reflexibility and Ti.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to make the reflection sheet for the liquid crystal display device disclosed by Aoki with the reflection sheet composition disclosed by Nakano since synthetic resin, especially polyethylene terephthalate, has an excellent heat resistance, as taught by Nakano (Page 3, paragraph 0034). Also, the use of a polymer having a high reflexibility and Ti, especially the white titanium, exhibits a strong effect to improve the concealing property (Page 3, paragraph 0036).

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki (US 2004/0061813A1) in view of Matsuda et al. (US 2002/0167626A1).

With respect to claim 8: Aoki discloses all of the limitations of the liquid crystal display device set forth in claim 2, but Aoki does not disclose the reflection sheet being formed by an extension of the reflection plate. However, Matsuda et al. disclose in Figure 9 a reflection sheet (element 10) formed from the extension of the reflection plate (element 10). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use the single element structure of the reflection sheet/plate disclose by Matsuda et al. in the display device disclosed by Aoki so that the thickness of the LCD device would be thinner by reducing two reflection layers to one single reflection layer.

Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki (US 2004/0061813A1) and Shioya et al (JP 2001/338512A) in view of Nakano (US 2003/0053008A1).

With respect to claims 12-13: Aoki and Shioya et al. disclose all of the limitations set forth in claim 11, but they did not disclose that the reflection sheet is formed of one of a synthetic resin. However, Nakano discloses in Figure 1 a reflection sheet (element 2) formed of one of a synthetic resin selected from the group consisting of alkylbenzene sulfonate (ABS), polyethylene terephthalate (PET), and polyvinyl chloride (PVC), and a non-metallic substance (Page 3, paragraph 0034). Nakano also discloses in paragraph 0036 that the synthetic resin includes one of a polymer having a high reflexibility and Ti.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to make the reflection sheet for the backlight unit disclosed by Aoki and Shioya et al. with the reflection sheet composition disclosed by Nakano since synthetic resin, especially polyethylene terephthalate, has an excellent heat resistance, as taught by Nakano (Page 3, paragraph 0034). Also, the use of a polymer having a high reflexibility and Ti, especially the white titanium, exhibits a strong effect to improve the concealing property (Page 3, paragraph 0036).

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki (US 2004/0061813A1) and Shioya et al (JP 2001/338512A) in view of Matsuda et al (US 2002/0167626A1).

With respect to claim 14: Aoki and Shioya et al. disclose all of the limitations set forth in claim 11, but they did not disclose the reflection sheet being formed by an extension of the reflection plate. However, Matsuda et al. disclose in Figure 9 a reflection sheet (element 10) formed from the extension of the reflection plate (element 10). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use the single element structure of the reflection sheet/plate disclose by Matsuda et al. in the backlight unit disclosed by Aoki and Shioya so that the thickness of the LCD device would be thinner by reducing two reflection layers to one single reflection layer.

## *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wen-Ying P. Chen whose telephone number is (571)272-8444. The examiner can normally be reached on 8:00-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571)272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Wen-Ying P Chen
Examiner
Art Unit 2871

wpc

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